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AUTHOR	Shim, Minsuk K.; Felner, Robert D.; Shim, Eunjae
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ABSTRACT

This study examined the effects of family structures on students' academic achievement in terms of self-reported grades. It also examined relevant factors that would explain the differences in student grades among students from intact two-parent families, step-families, and single-parent families. Data came from a statewide survey of students in grades 6 through 12 in Rhode Island. The predictors used were demographic characteristics (family structures, participation in free/reduced lunch program, minority status, mother's education, after-school supervision, and grade levels), parental academic expectation, family learning environment, and daily stresses. The achieved sample contained 25,511 students from 2-parent families, 4,831 students from step-families, and 8,929 students from single-parent families. Results support the hypothesis that family structure was not itself a factor in explaining the differences among the groups. Student perception of parental academic expectations was the most important predictor for differences in achievement. Students who believed their parents had high academic expectations tended to have higher grades regardless of family structure. However, a larger portion of the students from step- or single-parent families tended to have very low expectations. They also tended to experience more stresses at school, which had negative effects on achievement. The study shows that the beliefs and attitudes of parents foster the academic success of their children. (Contains 2 tables, 1 figure, and 11 references.) (SLD)

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The Effects of Family Structures on Academic Achievement

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Minsuk K. Shim, Robert D. Felner, & Eunjae Shim

School of Education
National Center on Public Education and Social Policy
University of Rhode Island
Kingston, RI 02881

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Introduction

The number of nontraditional families, including single-parent families and step-families, in America has been steadily increasing. Estimates are that at least half of all children today will spend some time in a single-parent family before they reach age 18 (Furstenberg and Cherlin, 1991). Single-/step-parenting is viewed as one risk factor that can lead to unsuccessful adolescent academic outcomes. Many studies have identified the possible educational problems suffered by children from single-/step-parent homes (Astone & McLanahan, 1991; Downey, 1994; Entwisle & Alexander, 1995; Featherstone et al., 1992; Mueller & Cooper, 1986; Lee, 1993; Pong, 1998; Zill, 1988). Disruption in home life accompanying death, separation or divorce, has been found to be associated with poorer school performance, and to lower academic expectations and emotional stability. However, studies which examine the effects of family structures on the academic and behavioral outcomes of children do not provide consistent findings. Some have found that there are significant and negative effects of single-parent family structure on student academic achievement, while others have found little evidence of an association between single-parent family structure and academic achievement.

This study examines the effects of family structures on students' academic achievement in terms of self-reported grades. It also examines the relevant factors which would explain the differences on student grades among students from intact two-parent families, step-families, and single-parent families.

Data and Methods

The data for this study come from state-wide survey of students in secondary grades (grades 6 through 12). As an evaluation tool for a state-wide accountability system, researchers at the National Center on Public Education and Social Policy at the University of Rhode Island have

developed a comprehensive survey called The High Performance Learning Communities (HiPlaces) Assessment which includes various student outcomes including grades they earn last year as well as other demographic characteristics. The whole state of Rhode Island participated in the HiPlaces Assessment in 1998-99 academic year, consisting of over 60,000 students in secondary grades from more than 100 schools. First, we examined whether there were significant differences on academic achievement among students from different family structures. The dependent variable in this study is the self-reported grade students earned last year which is on ordinal scale: mostly A's and B's, Mostly B's, Mostly B's and C's, Mostly C's, and Mostly D's and below. As the grade was a non-parametric outcome, we used the chi-square goodness-of-fit tests to see whether there were significant differences among the three groups. With the targeted population of this study (34,513 students from two-parent families, 6,842 students from step-families, and 13,389 students from single-parent families), the resulting chi-square statistics (Pearson) was 1674.571 with 8 degrees of freedom and it was statistically significant at .01 level. As we saw the significant differences on grades among the three groups, we then examined the factors that were relevant to the differences in achievement. The predictors used in this study are the demographic characteristics (family structures, participation in free/reduced lunch program, minority, mother's education, after-school supervision, and grade-levels), parental academic expectation, family learning environment, and daily stresses -- average responses of multiple questions (see Table 2). We selected students who had complete data on all the variables. The achieved sample consists of 25,511 students from two-parent families, 4,831 students from step-families, and 8,929 students from single-parent families. Table 1 shows the distribution of grades of the three groups. Although there were significant differences in grades among the three groups, especially between two-parent families and single-parent families, we believed the differences were not due to family structure per se. Lower

socioeconomic status, less parental support, lower parental academic expectation and higher stresses due to family disruption of single-parent families might be the reason behind seemingly different achievement levels of the three groups. As a methodological tool for this study, we used classification tree algorithm known as CART (classification and regression tree), a procedure for analyzing categorical (classification) or continuous (regression) data (Breiman et al., 1984; SPSS Inc., 1998). CART is a non-parametric procedure using exhaustive searches and computer-intensive testing to select the optional tree. It is typically more accurate for classifying data sets than conventional parametric techniques such as linear regression, discriminant analysis, and logistic regression, where data sets show high dimensionality, multicollinearity, and non-homogeneity. Previous research has shown that CART is often 10 to 15 percent more accurate than parametric models (Breiman et al.: 1984). The program includes reliable estimates of error rates and is robust to outliers. Moreover, this method allows us to examine the interactions among several variables used in classification, which is an important aspect of this study.

Results

Among the predictor variables that were used in the model, we selected the family structure for the first-level tree (see Figure 1). This allows us to model the relevant factors to explain the achievement differences among the three groups. CART combined step-families and single-parent families at the first level tree since the achievement patterns were almost identical between step-families and single-parent families (see Table 1). The most important factor which explained the differences in grades was the academic expectation of the parents, no matter which families they came from. Demographic factors such as lunch status, minority, and mother's education did not explain the achievement differences as much as the students' perception of their parental academic expectations. When students believe their parent(s) have higher expectation, their reported grades

were higher regardless of their family structures. Although the percentage of students who got mostly A's and B's last year was almost 20% lower for students from step-/single-parent families than their counterparts (36% compared to 53%), almost half of the students from step-/single-parent families with higher parental expectation (probably or definitely will do better next year, graduate HS, and go to college) reported they got mostly A's and B's. Among the students from two-parent families who reported lower parental expectation (probably or definitely will not do better next year, graduate from HS, nor go to college), only 14% of them got A's and B's whereas 30% of them got mostly D's and below last year. For the students from two-parent families with middle range parental expectation, grade-level appears to be an important factor. That is, students in higher grade levels (7th or higher) reported less A's and B's than their younger counterparts.

Among the students from step-/single-parent families, who believe their parents have very low expectation for them (definitely will not do better next year, graduate from HS, nor go to college), only 7% of them got mostly A's and B's whereas 55% of them got mostly D's and below last year. For the students from step-/single-parent families with middle range parental expectation, daily stresses they experience at school and grade-level they are in appear to be important factors. 25% of the students who experienced greater stress at school got mostly D's and below and another 29% of the students got mostly C's last year. Similar pattern for grade-levels was found for students from step-/single-parent families. 41% of the younger students (grade 7 or lower) with less daily stresses got mostly A's and B's.

Discussion

This study examines the effects of family structures on student achievement. The results supports our hypothesis that family structure itself is not a factor in explaining the differences among the three groups. The method used in this study allows us to examine the interaction among family

structures and other relevant variables. Students' perception of parental academic expectations is the most important predictor for the differences. Students who believe their parent(s) have high academic expectations tend to have higher grades regardless of their family structures. However, larger portion of the students from step-/single-parent families reported tend to have very low expectation (probably or definitely will not do better next year, will not graduate from high school, will not go to college) from their parents. They also tend to experience more stresses at school, which have negative effects on achievement. This study shows that parents hold certain beliefs and attitude and exhibit behaviors at home that foster the academic success of their children.

Rerefences

Astone, N.M., and McLanahan, S.S. (1991). Family Structure, Parental Practices, and High School Completion. *American Sociological Review*, 56, 309-320.

Breiman, L., Friedman, J.H., Olshen, R.A., and Stone, C.J. (1988). *Classification and Regression Trees*. Belmont, CA: Wadsworth International Group.

Downey, D.B. (1994). The School Performance of Children from Single-mother and Single-father Families: Economic or Interpersonal Deprivation? *Journal of Family Issues*, 15, 129-147.

Entwisle, D.R., and Alexander, K.L. (1995). A Parent's Economic Shadow: Family Structure versus Family Resources as Influences on Early School Achievement. *Journal of Marriage and the Family*, 57, 399-409.

Featherstone, D.R. et al. (1992). Differences in School Behavior and Achievement between Children from Intact, Reconstituted, and Single-parent Families. *Adolescence*, 27, 1-12.

Furstenberg, F.F., and Cherlin, A.J. (1991). *Divided Families: What Happens to Children When Parents Part*. Cambridge, MA: Harvard University Press.

Lee, S. (1993). Family Structure Effects on Student Outcomes. In B. Schneider & J.S. Coleman (Eds.), *Parents, Their Children, and Schools* (pp. 43-57). Boulder, CO: Westview Press.

Mueller, D.P. and Cooper, P.W. (1986). Children of Single Parent Families: How They Fare as Young Adults. *Family Relations*, 35, 169-176.

Pong, S. (1998). The School Compositional Effect of Single Parenthood on 10th-grade Achievement. *Sociology of Education*, 71, 24-43.

SPSS Inc. (1998). *AnswerTree 2.0 User's Guide*. SPSS Inc., Chicago, IL.

Zill, N. (1996). Family Change and Student Achievement: What We Have Learned, What It Means for Schools. In A. Booth and J.F. Dunn (eds.). *Family-School Links: How Do They Affect Educational Outcomes?* Mahwah, NJ: lawrence Erlbaum Associates, 139-174.

Table 1. Descriptive Statistics of the Sample by Family Structures

Family	Two-parent families (n=25,511)	Step-families (n=4,831)	Single-parent families (n=8,929)
Grades (Grades students earn last year)			
Mostly A's and B's	53%	37%	35%
Mostly B's	15%	16%	15%
Mostly B's and C's	21%	29%	29%
Mostly C's	8%	12%	12%
Mostly D's and below	4%	7%	8%
Gradem (Grade level)			
6 - 8	44%	44%	42%
9 - 12	56%	56%	58%
Minor (Minority)			
Minority (Non-white)	18%	26%	37%
Non-minority	82%	74%	63%
Frlunch (Lunch status)			
Free/reduced lunch	17%	33%	47%
Full paid lunch	83%	67%	53%
Momed (Mother's Education)			
HS graduation or less	38%	45%	47%
post-HS education	62%	55%	53%
Latchkey (After-school supervision - days/hours home alone)			
No days home alone	23%	21%	20%
1-2 days	26%	22%	20%
3+ days, 3 or less hours	26%	23%	20%
3+ days, 3+ hours	26%	35%	40%
Expar (Parent academic expectation)			
Mean	4.23	4.06	4.05
Standard deviation	0.68	0.76	0.78
Famtotal (Family home environment)			
Mean	2.74	2.62	2.60
Standard deviation	0.66	0.70	0.72
Dhsschoo (Daily stresses)			
Mean	2.58	2.67	2.66
Standard deviation	0.90	0.92	0.92

Figure 1. Classification and Regression Tree

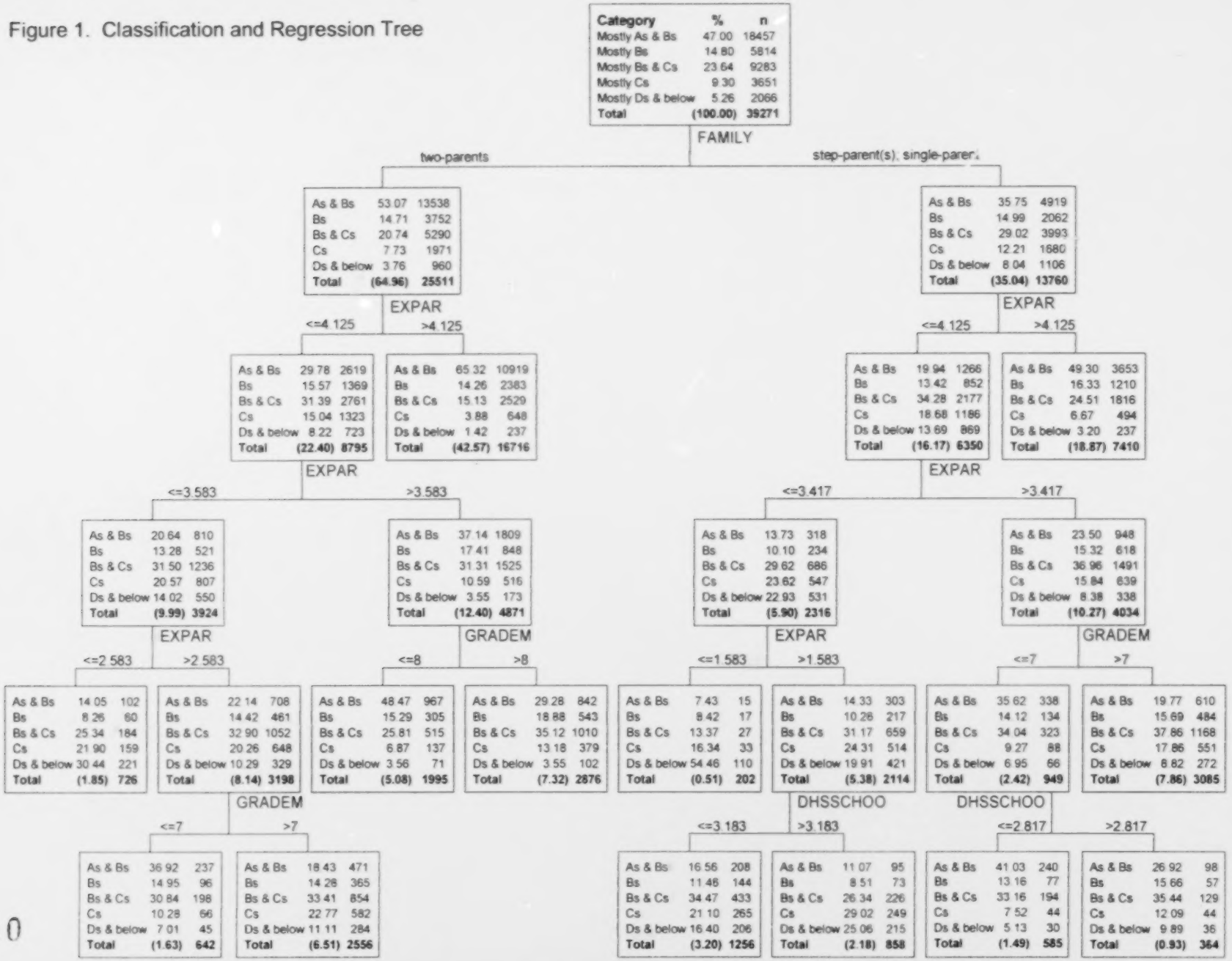

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Table 2. Questions on Parent academic expectation, Daily stresses, and Home environment

Parent academic expectation

Questions) Select the best answer for the following questions

1. Do your parents/guardian think you will do better in school next year?
2. Do your parents/guardian think you will make the honor roll next year?
3. Do your parents/guardian think you will graduate from high school?
4. Do your parents/guardian think you will go to college?

Options) 1. Definitely won't 2. Probably won't 3. Might
4. Probably will 5. Definitely will

Daily stresses

Questions) Below are a number of situations that people your age frequently experience. If the situation happened to you in the last month, indicate how much of a hassle it was by marking the appropriate circle.

1. Not getting along with teachers
2. Teachers expecting too much
3. Trying to get good grades
4. Having too much homework
5. Having (a) hard teacher(s)
6. Not understanding classwork

Options) 1. Did not happen 2. Not at all a hassle
3. A little bit of a hassle 4. A moderate hassle
5. A very big hassle

Family home environment

Question) How often do your parents/guardian do each of the following?

1. Help with your homework
2. Talk with you about how you can improve your school work
3. Make sure you do your homework assignment
4. Talk with your teachers about how you are doing at school
5. Go to school activities or meetings
6. Talk with you about why school subjects are important for the real world
7. Talk with you about different careers that you can have
8. Talk with you about how you are getting along with teachers

Options) 1. Never 2. Hardly ever 3. Sometimes 4. Often